METHOD AND SYSTEM FOR DETECTING ULTRASONIC SURFACE DISPLACEMENTS USING POST-COLLECTION OPTICAL AMPLIFICATION

ABSTRACT OF THE DISCLOSURE

The present invention detects ultrasonic displacements includes a detection laser to generate a first pulsed laser beam to detect the ultrasonic surface displacements on a surface of the target. Collection optics to collect phase modulated light from the first pulsed laser beam either reflected or scattered by the target. An optical amplifier which amplifies the phase modulated light collected by the collection optics. An interferometer which processes the phase modulated light and generate at least one output signal. A processor that processes the at least one output signal to obtain data representative of the ultrasonic surface displacement at the target.